

REMARKS

Claims 1 to 34 are all the claims pending in the application, prior to the present application.

The Examiner has indicated that claims 8-27 contain allowable subject matter and would be allowed if rewritten in independent form, including all the limitations of the base claim and any intervening claim.

Claims 5-8, 10-12, 15-28 and 31-34 have been objected to as being improper multiple dependent claims because a multiple dependent claim may not depend from another multiple dependent claim. The Examiner states that the claims have been treated on the merits, but the failure to correct this deficiency will result in the claims being removed from consideration.

In response, applicants have amended claims 5-8 to depend from claim 1, have amended claims 10-12 and 15 to 24 to depend from claim 8, have amended claim 25 to depend from claim 9, and have amended claims 26 and 27 to depend from claim 8. In addition, applicants have amended claim 28 to depend from claim 1, and have amended claims 31-34 to depend from claim 1.

In view of the above, applicants request withdrawal of this objection.

Claim 3 has been objected to as being an improper dependent claim because it fails to further limit the subject matter of a previous claim. The Examiner states that claim 3 depends from claim 2 but is identical in scope to claim 2.

The Examiner states that applicants are either required to cancel claim 2 or amend it to place it in proper form.

In response, applicants first note that applicants have amended claim 1 to incorporate the subject matter of claim 2, and have canceled claim 2. Applicants submit that amended claim 1

and claim 3 differ in scope. Thus, claim 1 refers to a region of  $930 \pm 15 \text{ cm}^{-1}$ , whereas claim 3 refers to a region of  $930 \pm 10 \text{ cm}^{-1}$ .

Accordingly, claim 3 is narrower in scope than claim 1, because claim 3 covers a region of  $920\text{-}940 \text{ cm}^{-1}$ , whereas claim 1 covers a region of  $915\text{-}945 \text{ cm}^{-1}$ .

In view of the above, applicants request withdrawal of this objection.

Claims 1-7 have been rejected under 35 U.S.C. § 102(a) as anticipated by the Wu et al article in *J. Phys. Chem. B*, Vol. 105:2897-2905 (2001).

Applicants submit that Wu et al do not disclose or render obvious the subject matter of the present invention as set forth in claims 1 and 3-7 and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to a titanosilicate having the following features:

(A) a titanosilicate composition represented by the following formula (1):  $x\text{TiO}_2 \cdot (1-x)\text{SiO}_2$ , wherein x is from 0.0001 to 0.2,

(B) wherein in the infrared absorption spectrum measured in the dehydrated state, the absorption spectrum has an absorption band having a relative maximum value at  $930 \pm 15 \text{ cm}^{-1}$ ; and

(C) wherein in the infrared absorption spectrum measured in the dehydrated state, the greatest value in the region of  $900\text{-}950 \text{ cm}^{-1}$  of the absorption spectrum is present in the region of  $930 \pm 15 \text{ cm}^{-1}$ .

Thus, as noted above, applicants have amended claim 1 to incorporate the recitations of claim 2. Accordingly, claim 1 recites that the infrared absorption spectrum measured in the

dehydrated state, the greatest value in the region of  $900\text{-}950\text{ cm}^{-1}$  of the absorption spectrum is present in the region of  $930\pm 15\text{ cm}^{-1}$ .

Wu et al do not disclose a titanosilicate represented by formula (1) and having a combination of features (B) and (C) of the amended claim 1, i.e. having an absorption band having a relative maximum value at  $930\pm 15\text{ cm}^{-1}$ , and having the greatest value in the region of  $900\text{-}950\text{ cm}^{-1}$  of the absorption spectrum being in the region of  $930\pm 15\text{ cm}^{-1}$ .

Wu et al teach that a Ti-MWW titanosilicate has been prepared by an acid treatment on a corresponding lamellar precursor which is hydrothermally synthesized with the coexistence of boron and titanium.

The IR spectra shown in Fig. 8 of Wu et al may show an absorption band in the region of  $900\text{-}950\text{ cm}^{-1}$ , but these spectra do not show the greatest value in the region of  $930\pm 15\text{ cm}^{-1}$ .

In fact, it appears that the IR spectra in Fig. 8 of Wu et al show the greatest value at  $950\text{ cm}^{-1}$ , but not in the region of  $930\pm 15\text{ cm}^{-1}$ . Therefore, Wu et al do not disclose feature (C) of amended claim 1. In this connection, applicants point out that amended claim 1 refers to "the greatest value," but not to "the greatest peak."

As described in the present specification, at page 61, line 23 through page 62, bottom line, the titanosilicate catalyst according to the present invention is a high-performance catalyst and can be obtained with good efficiency.

As shown in the Examples and Comparative Examples of the present application, titanosilicate catalysts not showing the characteristics of the IR spectra as defined in amended claim 1 exhibit inferior catalytic properties. See the present specification at pages 48 and 49, Table 4, for example. For instance, Figs. 2 and 3 show the IR spectra of the inventive Catalyst 1

of Example 1. In contrast thereto, Figs. 7 and 8 show the IR spectra of the catalysts of Comparative Examples 1 and 2.

As shown, e.g., in Table 4, only those catalysts falling within the definition of the IR spectra according to amended claim 1 have advantageous properties.

On the other hand, the catalysts of Wu et al have IR spectra similar to those of the Comparative Examples of the present application. See Fig. 8 of Wu et al and Figs. 7 and 8 of the present application.

Since Wu et al do not contain any indication that a catalyst showing an IR spectrum as defined in amended claim 1 might be advantageous, applicants submit that the subject matter of the present claims is clearly patentable over Wu et al.

In view of the above, applicants submit that Wu et al do not disclose or render obvious the subject matter of the present claims and, accordingly, request withdrawal of this rejection.

Claims 1-7 and 28-34 have been rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,759,540 to Oguchi et al.

Applicants submit that Oguchi et al do not disclose or render obvious the subject matter of the present claims.

As the Examiner notes, the process for producing the titanosilicate catalysts disclosed by Oguchi et al is the same as that disclosed by Wu et al. Applicants discussed the Wu et al process above. See Examples 1-5 of Oguchi et al. Thus, the titanosilicate catalysts obtained in Oguchi et al exhibit the same IR spectra as those in Wu et al. Therefore, applicants submit that the subject matter of the present claims is clearly distinguished from Oguchi et al for the same reasons as discussed above in connection with Wu et al.

In view of the above, applicants submit that Oguchi et al do not disclose or render obvious the subject matter of claims 1, 3-7 and 28-34 and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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